
SECTION 15486 - MEDICAL GAS SYSTEMS EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Special Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes medical gas system equipment and related accessories.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 15 Section "Meters and Gages" for thermometers, pressure gauges, and fittings.
 - 2. Division 15 Section "Medical Gas Piping Systems" for piping, tubing, and accessories; and for inspecting, testing, and certifying for medical gas systems.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

- A. Installer Qualifications: Engage an experienced Installer of medical gas systems equipment.
 - 1. The term "experienced Installer" is specified in Division 1 Section "Reference Standards and Definitions."
- B. Provide compatible equipment and accessories.

1.4 QUALITY ASSURANCE

- A. Comply with NFPA 70 "National Electrical Code."
- B. Comply with NFPA 99 "Standard for Health Care Facilities."
- C. Comply with UL 544 "Standard for Medical and Dental Equipment."
- D. Isolated Power System: Where equipment is used with isolated power system, provide equipment listed for that purpose.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store medical gas equipment with outlets and inlets plug to avoid entrance of dirt or contaminants.

PART 2 - PRODUCTS

2.1 RECIPROCATING DENTAL AIR COMPRESSORS

- A. The following Reciprocating Dental Air Compressor is identified on the plans and Medical Gas Equipment Schedule as DAC-1, Dental Air Compressor.
 - 1. Existing dental air compressor to be relocated as shown on plans.

2.1 DENTAL VACUUM PUMPS, GENERAL

- A. The following Dental Vacuum Pump is identified on the plans and Medical Gas Equipment Schedule as DVP-1, Dental Vacuum Pump.
 - 1. Existing dental vacuum pump and controls to be relocated as shown on plans.
 - 2. Separator Tanks: "ASME Boiler and Pressure Vessel Code" construction and that bear the appropriate code symbols, with vacuum gage, automatic drain, and cold water flush connection.

2.3 IDENTIFICATION

- A. Refer to Division 15 Section "Mechanical Identification" for equipment and accessory labels.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean medical gas system equipment as specified in Division 15 Section, "Medical Gas Piping Systems."

3.2 CONCRETE BASES

- A. Coordinate concrete equipment bases with work of Division 3.
- B. Construct concrete equipment bases to extend 6 inches (150 mm) beyond equipment in all directions.

3.3 EQUIPMENT INSTALLATION

- A. Install packaged and individual medical air compressors, dryers, vacuum pumps, and receiver tanks on concrete bases. Set and connect units in accordance with manufacturers' printed installation instructions. Install units plumb and level, firmly anchored, in locations indicated, and maintain manufacturers' recommended clearances. Orient so controls and devices needing servicing are accessible.
- B. Vibration and seismic controls for equipment are specified in Division 15 Section "Mechanical Vibration, and Seismic Controls."

3.4 CONNECTIONS

- A. Where not provided as part of manufactured equipment package:
 - 1. Install thermometers on dental air receiver tanks, dental vacuum receiver tanks, and where indicated.
 - 2. Install pressure gages on air receiver tanks, vacuum receiver tanks, and where indicated.
 - 3. Install pressure regulators downstream from dental air system compressors, dryers, purification units, and filter assemblies.
- B. Install pressure relief valves on dental air receiver tanks.
- C. Electrical Connections: Power wiring and disconnect switches are specified in Division 16 Sections "Wires and Cables" and "Circuit and Motor Disconnects."
 - 4. Grounding: Connect unit components to ground in accordance with the National Electrical Code and Division 16 Section "Grounding."

3.5 LABELING AND IDENTIFICATION

- A. Install labeling on equipment in accordance with requirements of NFPA 99 and Division 15 Section "Mechanical Identification."

3.6 COMMISSIONING

- A. Provide the services of a factory-authorized service representative to inspect equipment installation and to provide start-up service.

- B. Operate and adjust operating and safety controls. Replace damaged and malfunctioning controls and equipment discovered by service representative.
- C. Checks Before Start-up: Perform the following final checks before start-up:
 - 1. Verify that specified tests of piping systems are complete.
 - 2. Check that dental air compressor inlets are properly located for clean air supply, and that dental vacuum exhausts are properly located to prevent contamination of dental air compressor inlets and public spaces.
 - 3. Check that dental air compressor inlet filters and piping and dental vacuum pump filters and discharge piping are clear.
 - 4. Check for lubricating oil for lubricated-type equipment.
 - 5. Check V-belts for proper tension.
 - 6. Check for equipment vibration control supports and flexible pipe connectors and that equipment is properly attached to substrate.
 - 7. Check that safety (pressure relief) valves have a setting greater than dental air compressor discharge pressure but not greater than pressure rating of system components.
 - 8. Drain dental air and vacuum receiver tanks.
 - 9. Check for adequate room ventilation.
- D. Starting Procedures: Follow the manufacturer's printed procedures. If no procedures are specified by the manufacturer, proceed as follows:
 - 1. Energize circuits.
 - 2. Start and run equipment through complete sequence of operations.
 - 3. Check for excessive vibration and noise.
 - 4. Check air and vacuum pressures.
 - 5. Manually operate safety valves.
 - 6. Adjust operating controls including pressure and vacuum settings.

3.6 DEMONSTRATION AND TRAINING

- A. Provide the services of a factory-authorized service representative for 8 hours to demonstrate alarm system start-up and shut-down procedures, preventative maintenance and servicing procedures, and troubleshooting procedures. Review operating and maintenance information.
- B. Coordinate time of demonstration and training with Owner's representative

after system passes all inspections and is commissioned but before occupancy of facility. Provide training, by service representative, in accordance with Division 1 Requirements.

END OF SECTION 15486